"Computer Says No": Disabled Welfare Experiences and Envisioned Futures Under AI Governance

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Abstract

Progressive digitisation and adoption of artificial intelligence (AI) are reshaping welfare services in ways that risk compounding inequalities for disabled people. Globally, many governments present these reforms as beneficial–streamlining processes, reducing costs and eliminating delays. Yet digitisation and automation of welfare decision-making can deepen exclusion and erode human accountability. In response, this paper foregrounds the lived experiences of people with the communication disability aphasia in navigating digitised welfare and their perspectives on AI-automated futures. We report findings from a four-stage participatory design study involving eight workshops with 42 recruited co-designers. Reflexive thematic analysis identified five challenges: the cost of performing disability, geographies of inequity, navigating digital bureaucracy, the accessibility paradox and hostile design. Co-designers voiced concerns about AI-automation but envisioned inclusive future alternatives: AI dialogues that are patient, multimodal and supportive; welfare systems that are compassionate, transparent and retain human recourse; and infrastructures that are open, publicly governed and truthful.

CCS Concepts

• **Human-centered computing → Empirical studies in accessibility**; *Accessibility systems and tools.*

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CHI '26, Barcelona, Spain
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ACM ISBN 979-8-4007-2278-3/2026/04
https://doi.org/10.1145/3772318.3791025

Keywords

Artificial intelligence, AI governance, Algorithmic systems, Disability, Welfare systems, Accessibility, Human-centered AI, Critical HCI, Lived experience

ACM Reference Format:
Humphrey Curtis, Adam Jenkins, Alistair Gentry, Sioban Zacharek, Sally McVicker, Timothy Neate, and Filip Bircanin. 2026. *"Computer Says No"*: Disabled Welfare Experiences and Envisioned Futures Under AI Governance. In *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26), April 13–17, 2026, Barcelona, Spain.* ACM, New York, NY, USA, 26 pages. https://doi.org/10.1145/3772318.3791025

1 Introduction

"I am not a client, a customer, nor a service user. I am not a shirker, a scrounger, a beggar, nor a thief. I'm not a National Insurance Number or blip on a screen [...] My name is Daniel Blake. I am a man, not a dog. As such, I demand my rights. I demand you treat me with respect. I, Daniel Blake, am a citizen—nothing more and nothing less."

Almost a decade has passed since Ken Loach's disabled protagonist in the 2016 film *I, Daniel Blake* delivered these defiant words–an enduring indictment of British welfare services as a hostile infrastructure that strips citizens of dignity and respect. Today, the infrastructures that govern disability benefits and welfare support are undergoing rapid transformation [38, 89, 90]. In response to bureaucratic inefficiencies, rising demand and mounting public debt, governments have turned to digitisation [123] and automation of public service delivery and decision making [38, 89, 90]. Rather than investing in face-to-face human support, the British government, like many others, has announced sweeping plans to deploy artificial intelligence (AI) across public services–including large language models (LLMs) and algorithmic decision systems–to streamline access, reduce costs and eliminate delays [38, 89]. A landmark deal with OpenAI was announced recently in July 2025 [89] and brought government spending on AI contracts to £573 million for the year [90].

While presented as serving the public good, these techno-solutionist shifts toward digitisation and automation risk disproportionately harming disabled communities, for whom timely and accessible welfare services are essential to maintaining safety, health and well-being [72, 89, 107, 124]. At the time of writing, approximately 7 million people in the UK living with disabilities, chronic illnesses or mental health conditions depend on government welfare and benefits [61]. As AI takes on a greater role in welfare decision-making, concerns have grown over its harmful social consequences, particularly the erosion of democratic accountability and the violation of vulnerabilized citizens' fundamental rights, dignity and self-determination [1, 5, 26, 60, 127].

In response, both Human Computer Interaction (HCI) and AI research communities have called for deeper engagement with end-users, citizens and marginalised groups to shape the design of more ethical and equitable AI systems, algorithms and digitised governance infrastructures [1, 5, 60, 77, 123, 124]. However, at present, little research has directly engaged with disabled communities–to provide empirical insights into their lived experiences with digitised welfare systems. Moreover, existing work has offered little critical guidance from disabled people on future AI-automated public services and how they envision more inclusive welfare systems and governance infrastructures.

To address these gaps, in this work we focus on the experiences of people living with aphasia, a common and complex language impairment caused by damage to the brain's language centres [94]. Aphasia often arises suddenly after a stroke or head injury, though it can also develop gradually from a brain tumour or progressive neurological disease [94]. Around one-third of stroke survivors experience aphasia, affecting approximately 0.5 million people in the UK and over 2 million in the United States (USA) [10]–this prevalence highlights the pressing need to make digitised welfare systems fair and accessible for disabled people with language impairments. We therefore specifically seek to address two research questions:

RQ1: How do people with aphasia experience accessing digital welfare services, including the facilitators, barriers, emotions and harms they encounter?

RQ2: What lessons can be drawn to inform the inclusive design of AI-automated welfare service infrastructures?

To answer these questions, we conducted a four-stage participatory design process over six weeks, involving eight workshops with 42 co-designers. Throughout, we employed accessible and tangible workshop activities and aretfacts to support people with aphasia in deeper collaboration and to foreground the perspectives of disabled people with lived expertise in welfare systems [128]. Broadly, participatory design aims to foster inclusivity by involving those outside formal research in shaping the design and development of technology [22, 53, 103].

In the first three stages, our work focused on understanding the current experiences of people with aphasia in accessing digitised welfare services. Activities included ranking welfare access and importance, emotional experiences using custom card decks, as well as employing additional toolkits to map barriers and facilitators across digital service and benefit journeys. Building on these insights, the fourth and final stage adopted a more critical approach that engaged co-designers in envisioning alternative AI-automated welfare service futures. Informed by prior envisioning studies [5, 53, 60], we incorporated our preliminary findings into a series of accessible design fiction videos depicting people with aphasia interacting with near-future AI-automated welfare services [12, 35, 69]. These speculative video prompts enabled co-designers to then articulate anticipated risks and concerns alongside their hopes and recommendations for more inclusive AI-driven welfare futures [35, 53].

We then employed reflexive thematic analysis [19–21] to generate themes from all engagements and workshop transcripts, identifying the significant challenges people with aphasia face in existing digitised welfare systems, as well as co-designers' anticipated accessibility risks with AI-automation and their recommendations for more inclusive welfare futures. The contributions of this paper are threefold:

1. From a four-stage participatory design study foregrounding disabled communities' experiences of digitised welfare, we surface concerns and recommendations for AI-automated services. Reflexive thematic analysis identified five challenges: the cost of performing disability, geographies of inequity, navigating digital bureaucracy, the accessibility paradox and hostile design. Then co-designers envisioned inclusive future alternatives: AI dialogues that are patient, multimodal and supportive; welfare systems that are compassionate, transparent and retain human recourse; and infrastructures that are open, publicly governed and truthful.
2. We developed an accessible, tangible card-deck and supplementary toolkits to support co-design engagements on UK digitised welfare systems. The card-deck comprised four sections: *HELP* cards outlining benefits and services available to disabled applicants; *WHERE* cards highlighting the technologies, resources and locations through which welfare services are accessed; *BARRIER* cards identifying systemic challenges; and *FEELINGS* cards capturing co-designers' emotional experiences. The toolkits include: (a) a printable grid for ranking services by perceived difficulty and value, and (b) printable journey-mapping materials for charting service pathways and identifying hurdles encountered along the way.
3. A set of near-future design fiction videos depicting people with aphasia interacting with AI-automated welfare services. These speculative video prompts can be used to debate the merits and risks of automation and to explore implications for inclusive design and implementation.

2 Related Work

2.1 Current Welfare Services for People with Disabilities and Aphasia

The UK welfare state was established after World War 2, following Lord Beveridge's proposals to provide universal support *"from the cradle to the grave"* [13]. It encompasses five main services: social protection, the National Health Service (NHS), education, social housing and personal social services [13]. More recently, the shift toward *digital-by-default* welfare and social protection systems in the UK has delivered efficiencies, cost savings and increased automation for governments, while also offering new forms of online convenience for recipients [104]. In this study, we examine how disabled applicants living with aphasia in London navigate welfare and public services amid rapid digital transformation. People with aphasia are entitled to public services and disability benefits across the five domains of the welfare state, yet must secure access through application and approval processes that are increasingly digitised [123].

We seek to identify which digital public benefits and welfare services are both most important–and most difficult–for people with aphasia to access in the UK. For many, welfare engagement begins with healthcare: post-stroke citizens, often older adults, must book and manage NHS and General Practitioner (GP) appointments online through a health portal or app [106]. Beyond this, applicants who are deemed *disabled enough* can apply for a variety of state-provided disability services and benefits online, some of which are summarized in Table 2 [124]. Notably, the government is currently consolidating several of these means-tested disability benefits into *Universal Credit*, creating a centralized digital system [75, 79, 86].

Crucially, the increasing digitisation and automation of public welfare services places older adult and disabled communities at particular risk, as they are *already* among the most digitally excluded populations in the UK [43, 123, 124]. Recent data shows that disabled people are 1.5 times more likely than non-disabled people to experience difficulties when engaging with NHS digital health services [43]. At the same time, applicants must apply for welfare benefits and services through governmental digital systems characterised by multiple layers of legislation, complex means-testing and multifarious assessments [124]. Collectively, these processes impose burdensome digital, cognitive and language-based advocacy tasks on claimants, both making and maintaining their claims [124].

Across HCI and accessibility research, studies have reported the significant difficulties people with aphasia face when using everyday technologies and digital systems. People with aphasia encounter considerable barriers with language-centric technologies, including: mobile phones [45], the internet [62, 74], social media [46], videoconferencing [83] and search engines [62]. Yet, little is known about how people with aphasia experience digital welfare and public service systems, including the facilitators and barriers, as well as the emotional impacts and harms involved. Given that welfare systems rely on intrinsically language-focused processes, the barriers to making successful benefit claims are likely to be especially severe for people with aphasia compared to other communities.

In practice, Watson et al. [124] argues that disability assessments for welfare benefits typically reduce the complexity of a person's impairments to a single outcome: how much (if anything) a claimant will be paid. Prior work has repeatedly shown that these assessments are often experienced as humiliating and distressing [6, 124], exacerbating underlying health conditions and worsening applicants' mental and physical well-being [72, 102, 124]. Moreover, the stakes are exceptionally high: failing to pass assessments and secure welfare entitlements can leave disabled claimants unable to afford food, clothing, assistive technology and heating–pushing disabled people into debt and financial destitution [72, 114, 117, 123].

2.2 HCI, AI and Public Service Systems

Burrell and Fourcade [26] warn of a *"society of algorithms"*, where automated decision-making is embedded into almost every social institution, similarly Alston [7] has described the British welfare state as rapidly *"disappearing behind a webpage and an algorithm"*. Given the profound impact of these technological changes on public service infrastructures, HCI researchers globally have increasingly turned their attention to understanding the benefits and harms–even designing tools that can support citizens.

In the UK, Watson et al. [124] developed a customisable lifelogging prototype to support disabled claimants in recording their lived experiences to present stronger evidence for Personal Independence Payment (PIP) assessments. This intervention sought to mitigate the considerable stress and confusion participants reported when navigating PIP benefits [124]. Beyond disabled communities, Watson et al. [123] also developed a taxonomy of harms experienced by citizens living in poverty as they navigated digitized social protection systems. Drawing on surveys and interviews with this digitally excluded population, they applied scenario-based design to envision improvements to existing public service infrastructures [123].

In Australia, Bircanin et al. [17] developed communication technologies to assist people with intellectual disabilities in navigating applications for assistive technologies and services under the National Disability Insurance Scheme (NDIS). Their findings highlighted entrenched power imbalances that constrained participants' agency and suppressed their communication [17].

Drawing on crip and disability-justice scholarship, Carreras [28] characterizes the Danish welfare state's compulsory digital self-reliance as *frictional infrastructure* that produces–and deepens–inequalities through the accelerated individualization of digital access. In response, disabled communities have long developed traditions of crip making, hacking, and resistance–adapting and reworking digital tools and procedures to secure more equitable outcomes [49, 52].

In the Netherlands, Alfrink et al. [5] used speculative design to probe how public AI systems might become contestable, open and responsive to citizens' disputes. By first priming civil servants with a concept video of a deployed AI system and then conducting semi-structured interviews, they identified issues with civic representation and stressed that public service AI systems must align with democratic practices [5].

Similarly, Karusala et al. [60] explored AI-contestability with citizens across two different contexts: Chennai, India and Boston, USA. Across both, they emphasised the importance of *accompaniment*, highlighting how care work–particularly by intermediaries and affected communities–makes contestation with AI possible. This notion of *accompaniment* draws strong parallels with the Bennett et al. [14] framing of *interdependence*, whereby assistive technologies and environmental actors work collectively to create shared access to environments for people with disabilities.

In India, Mudliar [81, 82] and Singh and Jackson [109, 110] examine how Aadhaar–the national digital ID–shapes welfare delivery. They show that datafied welfare infrastructures reproduce inequalities that extend beyond citizens' physical access to technology. Infrastructural frictions, including: unreliable electricity and bandwidth and the repeated need to navigate unstable, interconnected systems for enrolment, seeding and biometric authentication–strongly shape beneficiaries' access to entitlements. Ultimately, digital, distributed welfare bureaucracies entrench tension, anxiety and exhausting effort for citizens; those unable to endure are further marginalised.

In Atlanta, USA, Zhou et al. [133] examined chatbot design for a metropolitan government service handling non-emergency requests. They found that citizens experienced problems at both the individual and community levels–particularly a lack of context-awareness, empathy and failure of the technology to mobilise broader public participation on key issues. In contrast, a more optimistic case study from Germany conducted participatory value-based design workshops to explore the use of AI-chatbots in automating council housing service delivery [1]. The study produced actionable guidance for aligning chatbot use, though trade-offs emerged around data protection and the ongoing need for human escalation protocols [1].

HCI–AI research on accessibility has grown rapidly across diverse topics and communities—with numerous systems developed to support disabled people; see Mack et al. [70], Chemnad and Othman [29], and El Morr et al. [40] for recent reviews. Based on this prior work, AI governance in public services will likely have two classes of systems that will impact disabled citizens: interactional AI (e.g., generative/conversational agents and triage chatbots that mediate access, gather evidence, or provide guidance) and decision-making AI (e.g., predictive/discriminative models that verify eligibility or trigger case escalation). In practice, welfare automation will involve both front-end interactional AI systems feeding back-end decision-making AI systems. However, we found limited HCI work that centres disabled people's community expertise and lived experience in relation to these changes to welfare services. Without recognising and acting on disabled people's lived experiences and recommendations, welfare automation risks deepening digital exclusion and reproducing ableist harms.

2.3 Participatory Design with Aphasia

Aphasia is an acquired language impairment, most often caused by stroke, that affects reading, writing, speech and comprehension [9, 15]. As an *invisible disability*, it is frequently misunderstood and under-recognised [94]. Although one-third of stroke survivors live with aphasia, fewer than 10% of the public are aware of the condition [30, 94]. Alongside communication barriers, many people with aphasia also live with hemiplegic paralysis on one side of the body [15]. These combined health challenges make the bureaucratic demands of welfare services–lengthy forms, assessments, appeals and automated processes–especially difficult to navigate.

To prevent welfare exclusion and denial of essential support, it is vital that people with aphasia are meaningfully involved in the design of welfare systems that can underpin their livelihoods. Participatory design offers a means of inclusively exchanging knowledge and expertise between researchers and communities [54, 55], but co-designing with people with aphasia requires adaptations to address communication barriers, cognitive fatigue and consent processes [128]. Prior work has developed tangible, low-abstraction methods that reduce reliance on speech or writing while supporting the agency and multimodal expression of people with aphasia [3, 35, 37, 85, 128]. For example, Wilson et al. [128] introduced Story Grids, which enabled non-verbal groups of co-designers with aphasia to rank technology features using physical props on a tabletop.

Building on art-therapy practices, Lazar et al. [65, 66, 67] demonstrate how creative making provides material languages that enable older adults–including people with aphasia and dementia–to express ideas and preferences. By dismantling researcher–participant hierarchies, their methods open space for multisensory co-design. In parallel, Cruz-Sandoval et al. [34] and Hsu [57] make HRI research more accessible to older adults through co-design approaches such as scaffolding, peer programming and supportive development tools. Extending this, recent crip-technoscience and disability-justice work in HCI has invited disabled people to speculate and imagine *criptopias*: futures that centre disabled expertise and expore desirable future worlds [8, 112].

Video prompts and design fiction have also proven accessible for co-designing technologies with older adults. For instance, the OASIS approach from Lindsay et al. [69] used video prompts and invisible design artefacts to communicate the varied purposes of different technologies. Similarly, Tsekleves et al. [115] employed design fictions and diegetic prototypes to prime older adults to evaluate future health service technologies. In sum, these HCI studies demonstrate that co-design approaches employing tangible artefacts, video prompts and design fiction can reduce communication barriers and support people with aphasia to shape the design of future welfare services.

3 Methodology

3.1 Wider Austerity Context

We chart the policy context that motivated this research: UK government debt stands at £2.87 trillion, with annual borrowing reaching £20.7 billion—higher than projected—bringing public sector net debt to approximately 96.3% of GDP [116]. In response, the 2024 Autumn Budget introduced a new wave of austerity measures, including £5 billion in cuts to welfare and disability-related benefits [97]. Alongside these cuts, the government initiated a mass transfer of legacy benefit recipients to Universal Credit, consolidating multiple benefits into a single digital system [75]. In parallel, reforms to PIP propose higher eligibility thresholds and stricter assessments, excluding many disabled claimants from essential support [73].

These policy shifts have sparked widespread condemnation. Disability Rights UK warned of a *"rapid and severe erosion of Disabled people's human rights"*, while the national disability charity Sense described the changes as *"devastating"*, forecasting a significant rise in absolute poverty [73]. Independent estimates suggest that at least 100,000 disabled people may be pushed into poverty as a direct result of these reforms [120]. Meanwhile, the Trussell Trust reports that 69% of people currently relying on food banks in the UK identify as disabled [25].

Public response has been forceful: more than 1,000 disabled people protested outside Downing Street, condemning the benefit cuts as *"vile and cruel"* [98]. Political fallout has also emerged: over 120 Labour backbenchers have opposed the government's welfare

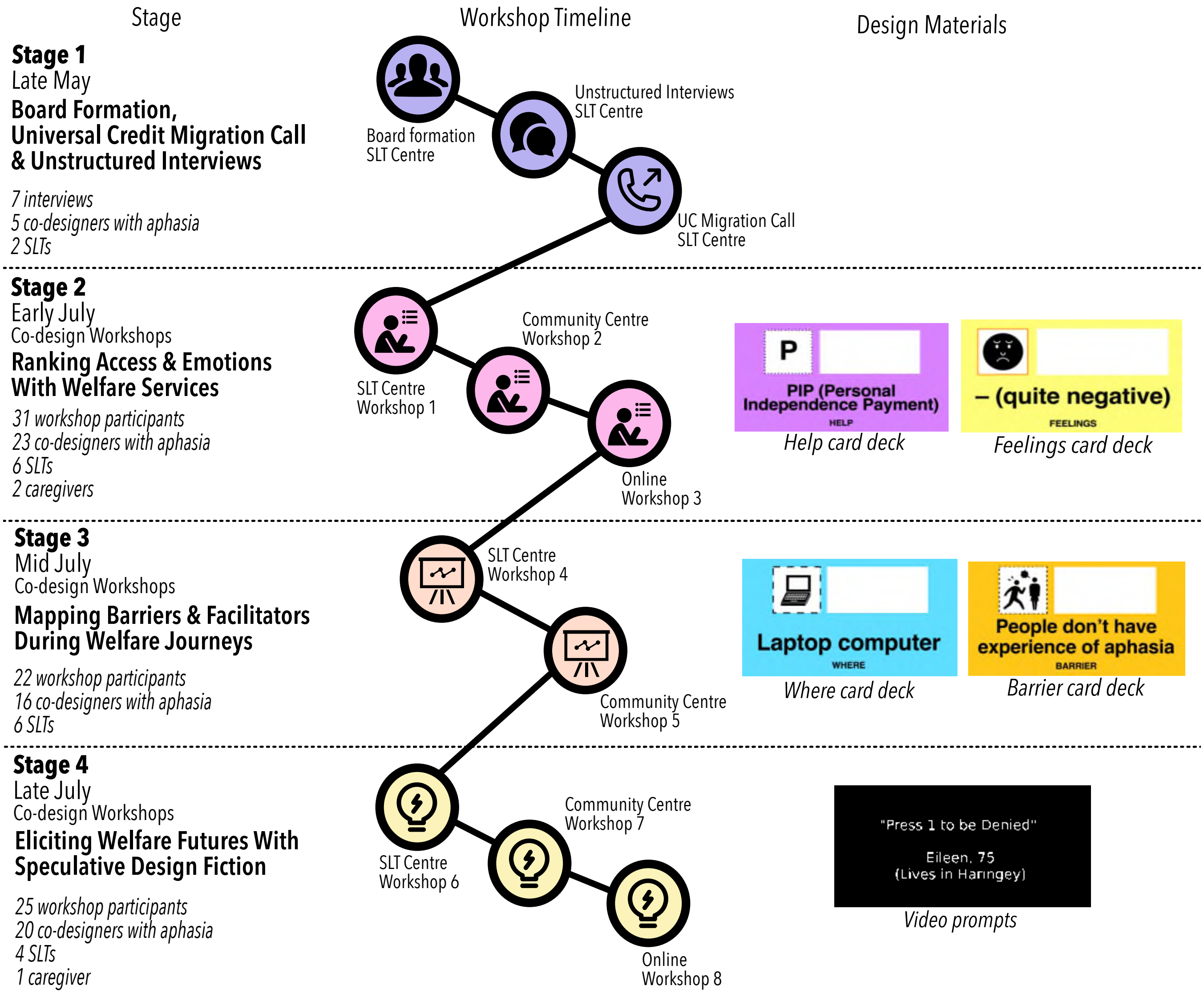


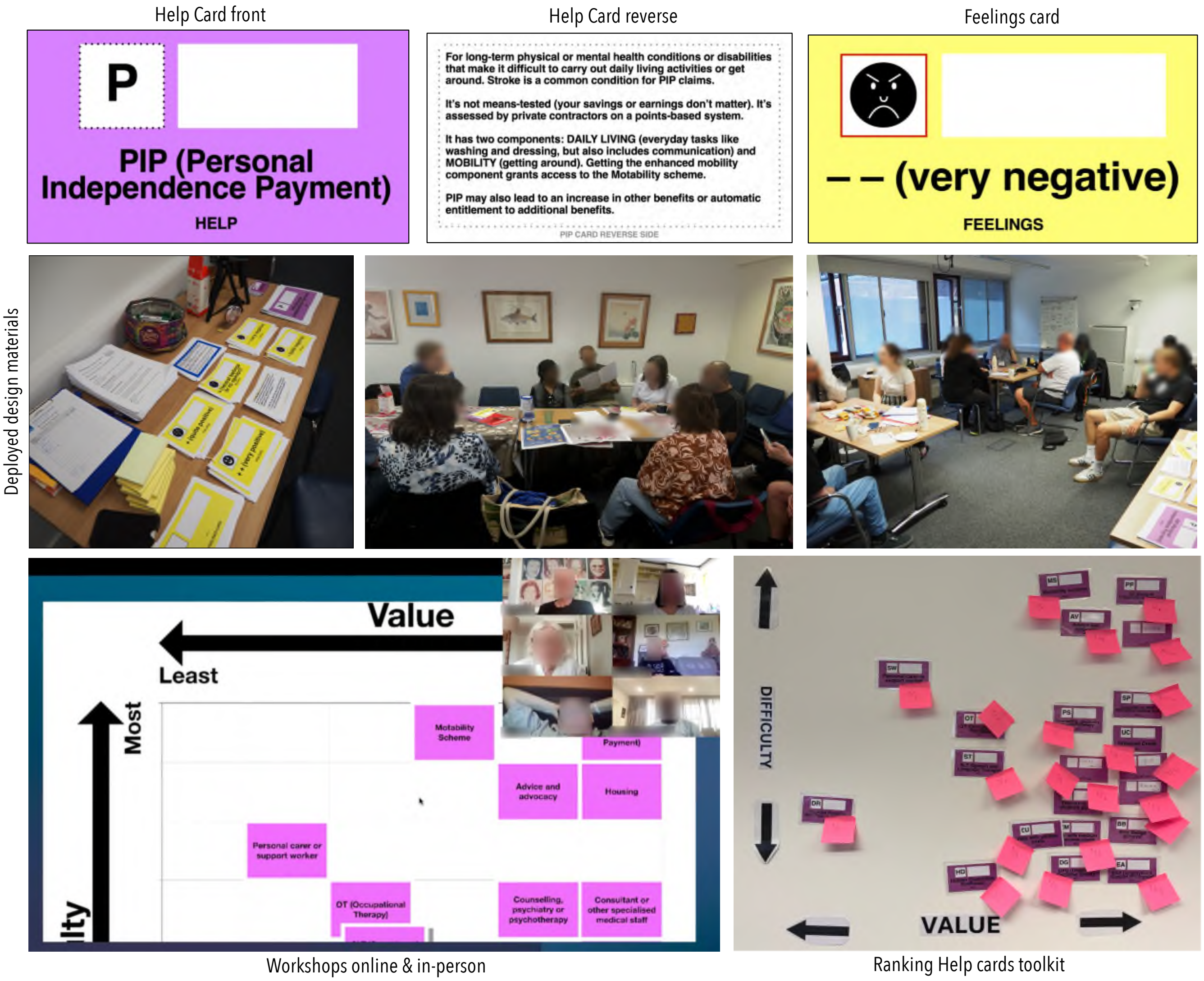
Figure 1: The four-stage study timeline.

strategy, with at least four MPs suspended for defying the party line [88, 119]. These austerity decisions unfold alongside growing reliance on digital infrastructures and AI-driven automation across public services, including the NHS and welfare delivery [38]. These government reforms have directly affected many attendees of the Aphasia Re-Connect: several community members faced benefit reassessments, Universal Credit (UC) migration and possible loss of essential support. This policy context motivated the study, informed recruitment and shaped the establishment of our advisory board.

3.2 Participants

Shown in Figure 1, a total of 42 people participated in workshops across all four parts of the study. Of these, 29 people with aphasia (P) took part as co-designers. A detailed breakdown of their roles and demographics is provided in Table 4. Participants ranged in age from their late 30s to over 90 years. All were at least six months post-stroke, had spoken English fluently prior to their stroke, and experienced varying forms of aphasic language difficulties as a consequence of stroke. Notably, 17 participants had hemiplegia, restricting the use of their right arm and leg and resulting in partial bodily paralysis.

In addition, 10 speech and language therapists (SLT) participated as co-designers, advisory board members and workshop facilitators. Lastly, 3 caregivers (CG) were also involved as co-designers, supporting the participation of their respective partner with aphasia. A full breakdown of these participant roles and demographics is provided in Table 3. All participants brought extensive experience navigating welfare services and benefit systems.



For long-term physical or mental health conditions or disabilities that make it difficult to carry out daily living activities or get around. Stroke is a common condition for PIP claims.

It's not means-tested (your savings or earnings don't matter). It's assessed by private contractors on a points-based system.

It has two components: DAILY LIVING (everyday tasks like washing and dressing, but also includes communication) and MOBILITY (getting around). Getting the enhanced mobility component grants access to the Motability scheme.

PIP may also lead to an increase in other benefits or automatic entitlement to additional benefits.

PIP CARD REVERSE SIDE

Figure 2: Images from Stage 2 workshops.

3.3 Study Settings

All research was conducted in collaboration with the Aphasia Re-Connect, a London-based charity that supports people with aphasia through free group speech and language therapy and a welcoming social community. Currently, the charity faces challenges due to widespread government council funding cuts to the voluntary sector [125]. Despite these constraints, the Aphasia Re-Connect continues to operate six weekly face-to-face support groups, each attended by 10–30 members living with aphasia. Paper authors R1 and R7 served as charity volunteers.

Data collection took place both online and in-person. Online workshops were conducted during the charity's Tuesday Zoom conversation group, while in-person workshops were held at two of the Aphasia Re-Connect weekly drop-in sessions: on Wednesdays at the Roberta Williams Speech and Language Therapy Centre and another on Thursdays at the Rowland Hill House Council Community Centre. For in-person sessions, participants were already familiar with the drop-in venues and traveled independently via public transport.

All sessions were carried out in neutral meeting rooms with tables and design materials. Throughout, participants were free to pause or withdraw from research at any point. Ethical approval for this study was granted by the King's College London Health Faculties Research Ethics Subcommittee. All participants were compensated £20 per hour for their time.

Figure 3: Images from Stage 3 workshops.

3.4 Stage 1: Board Formation, Unstructured Interviews and Universal Credit Migration Call

To begin, we established an advisory board to guide, support, and collaboratively shape the research across all four stages. The board comprised 5 people with aphasia and 2 SLTs, all long-term members of the Aphasia Re-Connect community. Members volunteered their extensive personal and professional experience of navigating welfare services, applying for benefits and contributing to HCI research. This composition integrated lived experience with professional expertise, providing perspectives on welfare access post-stroke and care infrastructures.

The advisory board grounded the research in participants' real-world needs and priorities. Drawing on a digital civics framing, it enabled shared decision-making and meaningful participation [44, 121]. Fortnightly one-hour meetings discussed emerging findings, planned co-design activities and iteratively adapted design materials. Communication access was supported with multimodal aids, including visual resources and additional time for slower-paced conversations.

At the outset, we conducted unstructured interviews with board members in pairs. These explored experiences with welfare services, elicited feedback on our approach and generated a list of benefits relevant to people with aphasia. Visual aids (e.g., paper, pens, simplified written questions) supported communication. Interviews were audio-recorded with consent and lasted 30–45 minutes (avg: 38 mins). Insights informed the development of design materials for Part 2, including the Help and Feelings cards.[1]

Finally, during this stage R1 supported P4 during his PIP-to-Universal Credit migration call with the Department for Work and Pensions (DWP). With P4's full consent, field notes and photographs were collected, offering valuable insights into the lived challenges of welfare system migration that informed subsequent stages of the study.

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[1] All co-design materials were commissioned from a disabled artist, ensuring accessibility for people with aphasia and colour-blind friendly design.

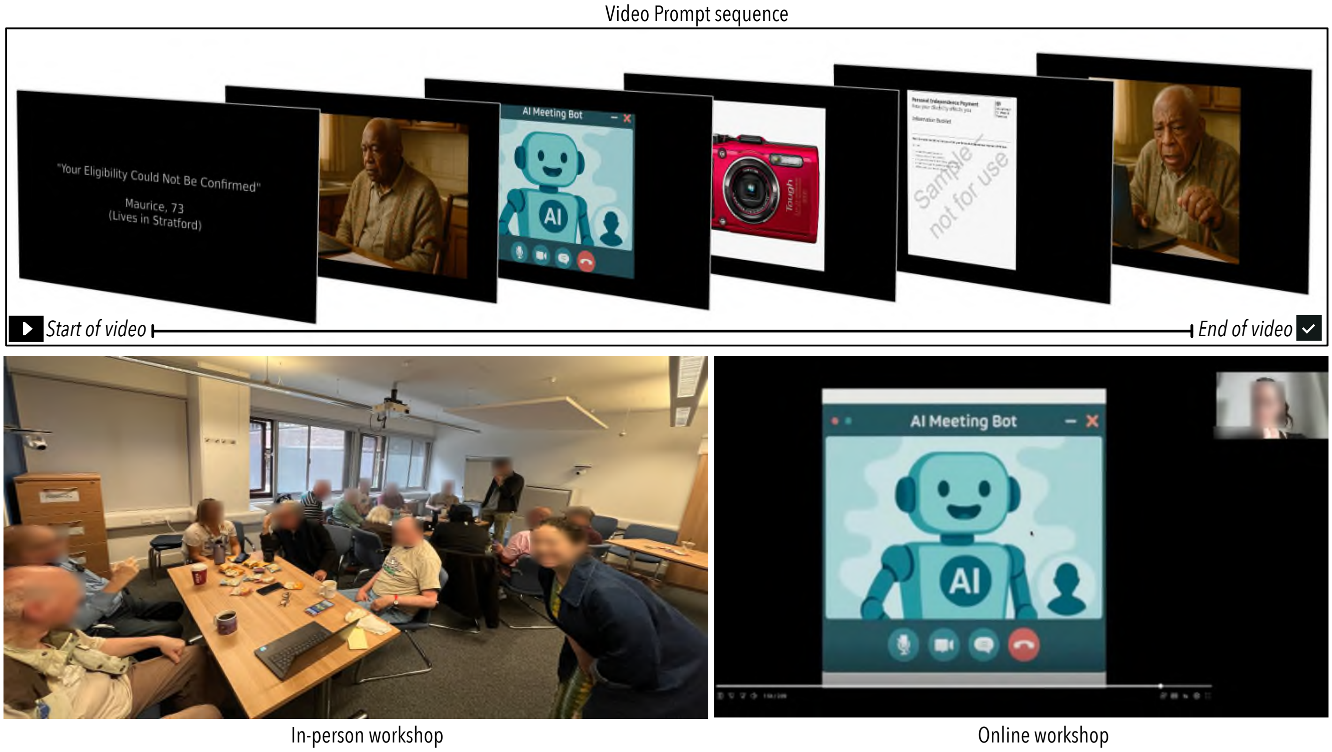

Figure 4: Images from Stage 4 workshops.

3.5 Stage 2: Workshops Ranking Access and Emotional Experiences with Services and Benefits

Depicted in Figure 2, the first round of workshops introduced a set of tangible purple Help cards to prompt discussion about UK public services and benefits. The aim was to empower co-designers to share personal experiences–positive, negative, or mixed–while supporting accessible, structured dialogue around services they engaged with or avoided.

To maximise accessibility, we employed a visually supported, tangible workshop format. Each laminated Help card represented a service or benefit (e.g., Personal Independence Payment, Disabled Facilities Grant) and featured a clear icon with a plain-language label. Participants drew cards at random and shared experiences with the corresponding service. The cards' physical tangibility grounded participants' narratives–serving as communicative scaffolds. After each discussion, we noted how many participants had successfully–or unsuccessfully–accessed the service.

Researchers and SLTs also introduced light-yellow Feelings cards, ranging from *Very Negative* to *Very Positive*. These surfaced the emotional dimensions of benefit-seeking, aligning with recent findings that disabled claimants experience heightened anxiety and stress [118]. Once the full Help deck had been explored, we transitioned into a group activity adapted from the Story Grids method [128].

On a large whiteboard, we developed a grid toolkit for ranking each service. The vertical axis represented perceived value (*Low–Very Important*), while the horizontal axis indicated access difficulty (*Easy–Hard*). Co-designers collaboratively placed cards on the grid, prompting discussion that revealed both points of consensus and disagreement. Final placement was decided through group deliberation. Workshops were audio-recorded and lasted 58–90 minutes (avg: 73 mins). This stage generated a baseline map of disabled applicants' welfare access and emotional experiences.

3.6 Stage 3: Mapping Barriers and Facilitators Through Service and Benefits Journeys

Building on the mapped benefits and services from Stage 2, this series of workshops focused on journey mapping the lived experiences of co-designers with aphasia as they navigated five important yet hard-to-access public services: PIP, GP/NHS, Council Housing, the Citizens Advice Bureau, and the Motability Scheme. The aim was to trace each journey—from the initial need or application attempt through to eventual access (successful or unsuccessful)–highlighting barriers, facilitators and technologies encountered.

As shown in Figure 3, we designed a tangible, visual journey-mapping toolkit to support this process. At its core were large A1 printed road graphics, serving as visual metaphors for personal journeys. Participants placed figurative *hurdle* cut-outs along the road to represent challenges encountered. This framing enabled shared discussion and flexible storytelling across varying communication abilities.

Table 1: Video prompts depicting near-future automated welfare services presented during Stage 4 workshops.

Title	Length	Description
2025: A Future of Care	05:44	Pam, a stroke survivor in her 60s, Nadia, a care professional in her 50s, and Yanni, a younger tech worker with a disability, use AI technologies such as driverless cars, telepresence robots, and voice-activated smart homes to address practical and bureaucratic challenges. Their world is imperfect and resources limited, yet through retraining, flexible care, and mutual support, skills and friendships emerge as part of the solution.
Press 1 to be Denied	02:19	Eileen, 75, from Haringey, calls the National Mobility Support Line to request a Blue Badge. She struggles with the robocall automated voice system due to dysarthria and is ultimately blocked by insurmountable security questions.
Your Eligibility Could Not Be Confirmed	02:09	Maurice, 73, from Stratford, is assessed for PIP over a video call with PIPA, an AI assistant. During the call, PIPA takes photographs and demands visible proof of mobility challenges alongside scripted questions.
Just Want to See the Doctor	01:56	Mark, 82, from Islington, struggles to book a GP appointment. After giving up on lengthy phone queues, the NHS app redirects him to a health questionnaire that denies service and recommends a pharmacist. An NHS chatbot then requests photos of his sore back but rejects them, forcing Mark back into the phone queue.
We'll Sort it Out Together, Brenda	01:52	Brenda, 65, from Bromley, uses Homely, her council housing chatbot assistant, to request home adaptations including a handrail and lower light switch. The chatbot guides her at her own pace, finalises a bathroom handrail under her Housing Support Plan, and emails her daughter to confirm the changes.

To enrich and structure these discussions, we introduced two supplementary card decks. The first, Where cards, prompted reflection on the technologies involved in each journey (e.g., smartphone, website, office). The second, Barrier cards, supported identification of obstacles (e.g., *"People don't have experience of aphasia"*, *"I have low confidence"*). Researchers and SLTs facilitated the table-top activity, recording insights on sticky notes and attaching them directly onto the maps.

This approach enabled co-designers to collaboratively share, visualise and structure their journeys in real time. The mapping process surfaced critical access pain points and generated rich discussions of workarounds and strategies. Workshops were audio-recorded and lasted 66–75 minutes (avg: 71 mins). These mappings provided a structured baseline for the speculative envisioning in Stage 4.

3.7 Stage 4: Eliciting Benefits and Service Futures with Speculative Design Fiction

Shown in Figure 4, the final series of workshops engaged co-designers with speculative design fiction to critically reflect on and envision possible futures for welfare access. Prior HCI research has shown that narrative-based video prompts are a powerful tool for inclusive speculative inquiry, particularly with marginalised communities [53], older adults [69] and groups with complex communication needs [35, 36, 58]. In our workshops, co-designers viewed five short video clips depicting near-future scenarios of digitised and automated public service systems. Each scenario featured a *someone-who-is-not-me* (SWIM) character with aphasia navigating the system [83, 128]–an approach that broadens constituency and accommodates varied communication needs.

As described in Table 1, four video clips were created by the research team, grounded in insights from Stages 1–3, and one by an independent design studio. Videos ranged from 1:53 to 5:45 minutes–short enough to remain accessible, yet rich enough to prompt discussion. Clips combined imagery from prior research, open-source photography and visuals generated with GPT-4-based text-to-image prompts. Narration was synthesised with OpenTTS and ElevenLabs voice libraries. All videos included subtitles and could be paused or supplemented with live narration by researchers to support comprehension.

The final video prompts were grounded in coded insights from Stages 1–3 i.e., co-designers' welfare experiences, tasks and pain points. Together with our Advisory Board, we applied a community-led prioritisation rubric with the following criteria: benefit value to the aphasia community; benefit difficulty/contestability; frequency in co-designers' accounts; and feasibility for an accessible short video. We first drafted 10 candidate scripts, presented them to the Board and then selected the final set based on the rubric. Each video prompt followed a common workflow: script, storyboard, Advisory Board review, production, iteration and final cut, before screening to the wider group. The video prompts explored both interactional and decision-making AI – participants could reflect on both the front-end interaction and back-end decision-making.

Following each video, we facilitated approximately 10 minutes of group discussion. Researchers and SLTs supported conversation using simple prompts and visual aids, while sticky notes captured reflections on barriers, emotional reactions and redesign opportunities. Participants were encouraged to critique the futures presented, empathise with the SWIM characters and propose alternative or improved service touchpoints. This speculative exercise surfaced current fears and frustrations with automation while creating space to re-imagine care-oriented, human-in-the-loop service models better suited to the needs of people with aphasia. Workshops were audio-recorded and lasted 44–71 minutes (avg: 57 mins).

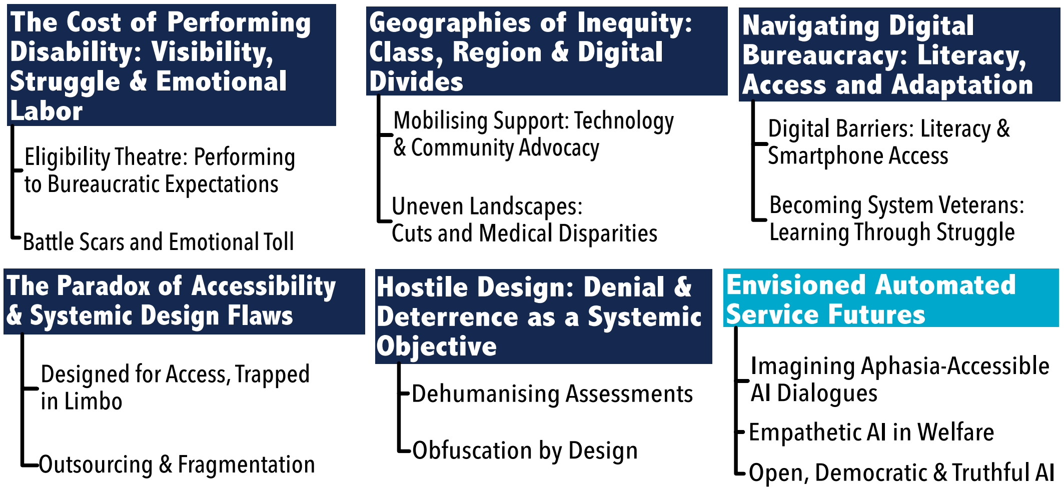

Figure 5: Six themes from thematic analysis.

3.8 Qualitative Data Analysis

Qualitative data from Stages 1–4 were collectively analysed and synthesised. All audio recordings were transcribed and examined in detail. We employed reflexive thematic analysis, an iterative process of identifying, coding and restructuring data into themes [19–21]. The first author conducted the initial coding, focusing on key patterns across the data. Subsequently, all authors collaboratively refined and discussed emerging themes to enhance rigour and reflexivity. Miro[2] was used extensively by R1, R2 and R7 to iteratively develop the thematic map, which was continually checked against the full dataset. Depicted in Figure 5, 2141 discussion instances were categorised into six themes.

4 Results

Our analysis across Stages 1–4 identified six overarching themes, capturing how people with aphasia experience welfare benefits and services under increasingly digitized and automated systems.

4.1 The Cost of Performing Disability: Visibility, Struggle and Emotional Labor

Applicants with hidden and non-visible communication disabilities face intense pressure to be seen, believed and supported. This *performance* of disability imposes emotional costs, often invalidating lived experience.

4.1.1 Eligibility Theatre: Performing to Bureaucratic Expectations. Repeatedly, disabled applicants are required to *"prove"* disability in narrow and highly visible terms that conform to bureaucratic points-based classifications and algorithmic expectations. All applicants described how aphasia was frequently unrecognized, or dismissed as *"not disabled enough"* whereas those with overt physical impairments–such as wheelchair use–were more readily granted welfare support. As P3 explained, *"You've got to have a physical disability or wheelchair, but if you have got one, it's easier to get... they don't recognize aphasia as a disability"*.

Bureaucratic expectations place applicants with aphasia at a considerable disadvantage, leading to repeated minimisation of disability and formal appeals. Even severe cases were downgraded, leading to frustration and contestation. P5, largely bed-bound from hemiplegia, was placed in a lower category despite medical evidence: *"I cannot go 50 metres more than in one go properly, which is in the highest category, and they put me in the standard category"*. SLT1 regularly advises people with aphasia to frame applications around their *"worst day rather than your best day"* in order to accrue more *"disability points"* and improve their chances of immediate welfare recognition.

Yet such enactments take a psychological toll as P3 reflected, *"They class you as not disabled enough"* leaving some applicants to minimize their own impairments and doubt their entitlements. In a group exchange, CG2 resisted the idea of applying for a Blue Disability Badge for her car, remarking, *"I've had cancer since umm... P17 has had his stroke... ermm... we're both able to walk so... I don't think we're entitled!"*. She was quickly countered by SLT1 and P3 encouraging her to stress physical limitations: *"What they're looking for... is physical disability... if P17 has a problem walking a certain distance then you've got an argument!"*. In sum, these accounts illustrate how welfare systems stage a form of *eligibility theatre* that privileges visible impairments while erasing non-visible, cognitive and communicative conditions such as aphasia.

4.1.2 Battle Scars and Emotional Toll. Applying for welfare benefits left participants overwhelmed, fearful and humiliated. The process of navigating forms and assessments was described as emotionally exhausting. From the outset, participants described the process as overwhelming[3]–P4 reflected, *"The PIP book is not aphasia friendly... difficult to read with aphasia, needed to be much more clear and*

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[2] https://miro.com/

[3] Many applicants were left jobless by their stroke and deteriorating health.

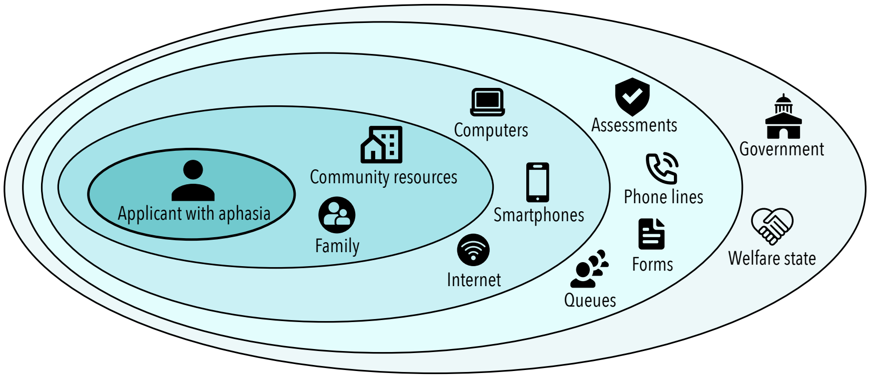

Figure 6: Synthesized visual of workshop discussions, each applicant with aphasia is interdependent upon: (1) community resources and family members to access (2) technological tools for (3) forms, assessments, phone lines and queues to (4) apply for and use welfare and government resources.

simple... it felt quite confusing and overwhelming". SLT1 echoed this, noting the stress of recall for online DWP forms: *"You need to remember things. And actually you need to find a whole host of information!"* and P2 added, *"The PIP form itself is very daunting"*. Repeated applications compounded this strain. P4, turned down three times over nearly a decade, recalled: *"Every time I applied... they said No! No! No! [...] It makes you feel you don't have a disability... when you get turned down"*. P5 described PIP phone assessments as *"very humiliating, very personal... they ask if you can wash your hair, go to the bathroom... it's too personal!"*.

The tone of DWP letters, often threatening withdrawal of support, provoked persistent anxiety and fear. P4 deliberately chose phone-based applications as a defensive strategy due to fear of mistakes: *"Over the phone I can always say they [DWP] filled it in wrong–if I do it online I'll make mistakes"*. Even successful outcomes brought only partial relief. As P9 admitted, *"Now I've got it [PIP]–very positive, I couldn't do without it... [but] if you haven't got PIP, you're struggling without it"*. This constant precariousness left participants caught between anger at the system and fear of rejection, consistently describing the experience as confusing, humiliating and exhausting.

4.2 Geographies of Inequity: Class, Region and Digital Divides

Access to welfare and healthcare was profoundly uneven, shaped by regional cuts, digital infrastructure and the presence or absence of support networks. Sustained austerity has eroded in-person services, leaving many reliant on digital systems and community advocacy, which exacerbated existing inequalities.

4.2.1 Mobilising Support: Technology and Community Advocacy. Navigating welfare was rarely a solitary act. Participants mobilised networks of family, friends and community advocates to compensate for inaccessible, technology-driven systems. P3 explained, *"My sister came here. She's my official representative of the DWP"* while P8 relied extensively on her daughter to write letters and submit applications–even sending her WhatsApp photographs to claim a cinema discount during a Workshop session. Others turned to institutional or charitable intermediaries. P7 described needing support from local disability rights and charity workers, P25 relied on staff in his care home to complete online claims and P5 orchestrated an elaborate coalition of a stroke association worker, GP, social prescriber and Citizens Advice Bureau (CAB) staff to secure her PIP tribunal appeal dates. Where community resources disappeared, prospects worsened. P9 lamented the closure of his local CAB, without it, neighbouring centres were *"inundated"* leaving him stranded.

Success depended less on applicants own capacities, than on their ability to mobilise supportive networks and digital tools, exposing systemic inequalities between those with reliable allies and technological fluency, and those left to struggle alone. As P2 reflected, many are not so fortunate: *"Not everyone can afford or have a family member to support their applications... People don't like to be disempowered–people want to be empowered! The telephone is a big problem for people with aphasia–some websites don't work, they ask for telephoning... It will get more difficult with the cut in welfare... We need all the help that can possibly be given to us! I'm lucky because I have friends and family"*. As Figure 6 illustrates, welfare access was collective and interdependent, hinging less on individual ability than on mobilising allies and digital tools–thereby exposing systemic inequities between those with resourceful networks and those left to struggle alone.

4.2.2 Uneven Landscapes: Cuts and Medical Disparities. Funding cuts and regional disparities across the NHS produced profoundly uneven healthcare experiences. In some boroughs, participants encountered long waits, fewer specialists and rigidly digitised systems. Elsewhere–often in more affluent areas–they described supportive and adaptive practices. P6 recounted what he called an *"ideal"* situation: *"No, I go face to face. Yeah, and they know what aphasia is... my GP's wife got aphasia so the whole practice [was] trained how to deal with aphasia!"*. Similarly, some participants (e.g., P2, P3 and P27) reported being able to walk in or directly book appointments over the phone.

In other regions, many were denied even basic adjustments despite their disability. P26 described being forced into phone-only

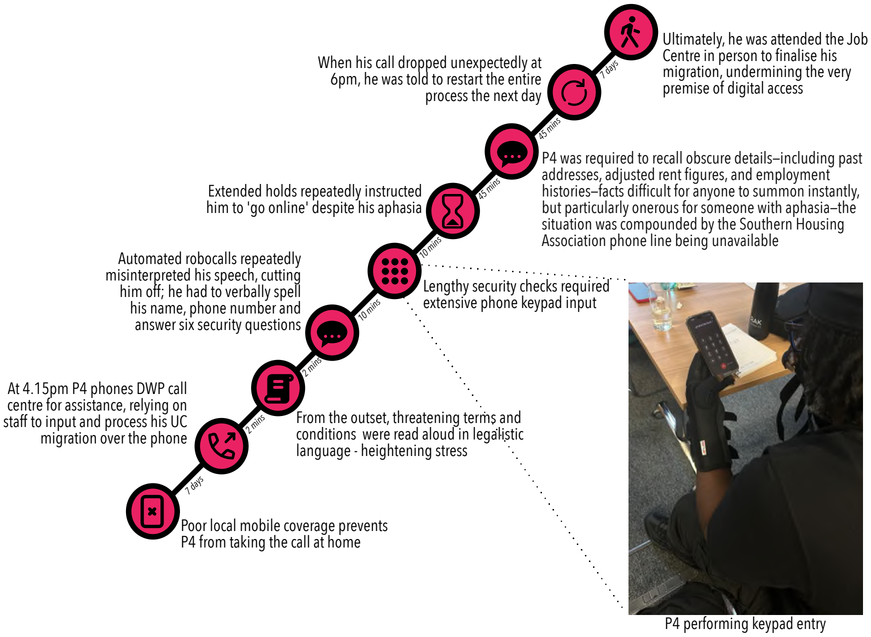

Figure 7: Timeline of P4's phone-based Universal Credit migration.

consultations despite severe aphasia: *"My doctor is terrible... you can't get an [in-person] appointment... they've changed it to a phone call–I said I can't do it, what's the point!"*. SLT7 echoed, *"I've written letters, I've phoned the GP to say can you change people's communication preferences–they won't do it!"*. Where practices refused to adapt, participants with severe aphasia leaned heavily on relatives to endure the ordeal of phone queues. P25 explained, *"I'm so lucky, my auntie... on Monday she used almost two hours on the phone"*. CG2 admitted her husband P17[4] had not seen a doctor in years without her intervention: *"Unless I'm here and able to phone for P17, of course, without me, he can't phone"*.

P5 highlighted how healthcare barriers intersected with childcare and welfare. To obtain a doctor's note excusing her son from school, her surgery refused phone calls and instead required queuing at 7:30am–leaving her unable to balance care responsibilities: *"So they only accept your son being home from school if he provides a doctor's letter... a private certificate–but you have to pay!"*. Such restrictions also threatened her welfare claims, since medical letters were vital evidence for other benefits like PIP. Ultimately, people with aphasia in London faced a fractured landscape. For some, healthcare was immediate, face-to-face and compassionate; for others, it was obstructed, digitised and out of reach.

4.3 Navigating Digital Bureaucracy: Literacy, Access and Adaptation

Digitised welfare services demand device access, authentication and online literacy. For people with aphasia, these systems often exclude and overwhelm, while repeat *applicant veterans* adapt through hard-won expertise in navigating hostile infrastructures.

4.3.1 Digital Barriers: Literacy and Smartphone Access. Digitised welfare and health services presume access to devices, stable internet and digital literacy. For people with aphasia, these demands often became insurmountable, with logins, passwords and two-factor authentication experienced as exclusionary. During one workshop, P27 struggled to access the *Evergreen Life* health service portal: unable to read or write confidently, she found remembering passwords and navigating repeated authentication prompts overwhelming. In her words: *"Yes... but its difficult! No this is difficult [Evergreen]! It's really difficult to log in [Evergreen Life]. Me, look I don't know whats that!"*, SLT7 echoed the shared frustration: *"This is the problem–[remembering] all these passwords!"*.

Others found that even when portals were technically accessible, they were practically unusable. P6 explained that booking GP appointments through the app was confusing and usually fruitless: *"like when you go on there [the app]... it obviously all appointments are booked up–so come in-person or phone and I find it hard to phone people–so I go in-person"*. His workaround–physically attending the GP–illustrates the inaccessibility of current digital systems for many people with aphasia. These barriers became especially acute when welfare services migrated entirely online. During the study, several participants were required to migrate from PIP to Universal Credit, yet most owned only a smartphone. Attempting to complete lengthy and complex DWP applications on a small screen was recognised as *"impossible"*. Applicants (P4, P9, P12) were also asked to upload or reproduce extensive records–tenancy agreements, council tax documents, bank statements and medical letters–tasks that were unmanageable for those without basic computer access printers or scanners. As SLT1 summed it up, *"There is a quest to get as much information as you can"*.

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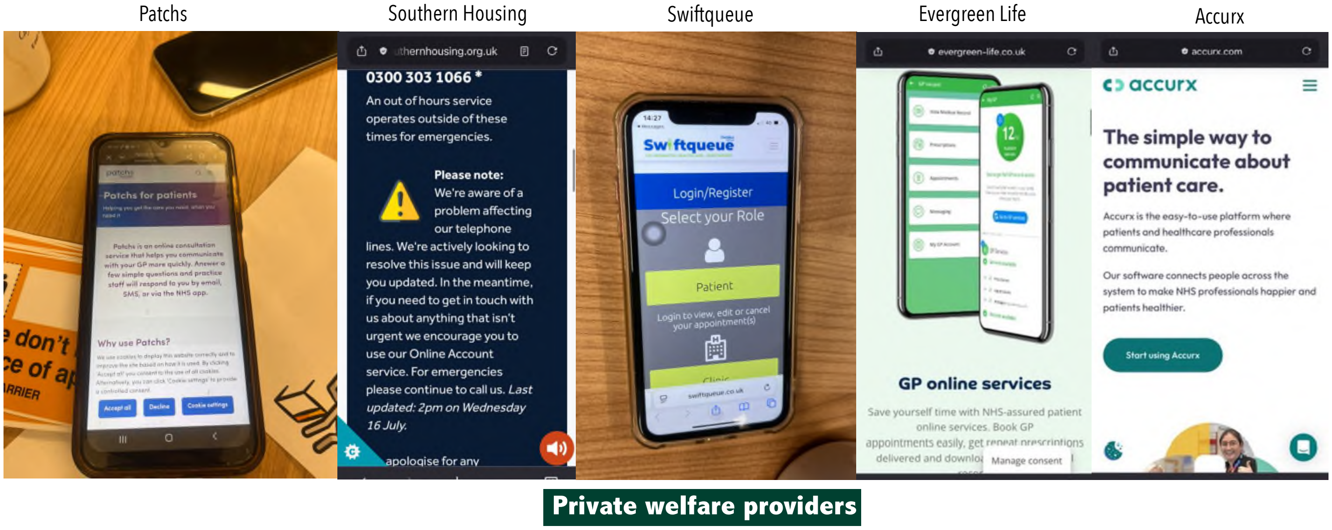
[4] P17 is over 90 years old with non-verbal aphasia but has not seen a doctor in 2.5 years due to limited local appointment availability.



Patchs for patients

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Why use Patchs?

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An out of hours service operates outside of these times for emergencies.

Please note: We're aware of a problem affecting our telephone lines. We're actively looking to resolve this issue and will keep you updated. In the meantime, if you need to get in touch with us about anything that isn't urgent we encourage you to use our Online Account service. For emergencies please continue to call us. *Last updated: 2pm on Wednesday 16 July.*

apologise for any

Login to view, edit or cancel your appointment(s)

GP online services

Save yourself time with NHS-assured patient online services. Book GP appointments easily, get repeat prescriptions delivered and downlo

The simple way to communicate about patient care.

Accurx is the easy-to-use platform where patients and healthcare professionals communicate.

Our software connects people across the system to make NHS professionals happier and patients healthier.

Figure 8: Private welfare providers noted by co-designers; Southern Housing's phone lines were down due to outages.

Supporting P4's Universal Credit migration calls further illustrated the compounded challenges of digital bureaucracy. Shown in Figure 7, supporting him during a phone-based claim revealed multiple points of breakdown. Together, these cases highlight how digitised welfare systems–framed as efficient and user-friendly–are instead hostile to those with limited digital literacy, minimal technological resources and communicative impairments. For applicants with aphasia, online services compound bureaucratic demands, creating exclusion and repeated cycles of failure.

4.3.2 Becoming System Veterans: Learning Through Struggle.

Over time, repeat applicants described developing strategies for navigating bureaucratic systems, particularly appeals. These adaptations underscore how welfare systems amplify struggle, forcing applicants to acquire expertise in navigating hostile infrastructures. Initially, CG1 emphasized that applying for services and benefits was a skill – one especially difficult to acquire later in life. He reflected: *"I think the big issue with all of this is... if you've never been involved with making benefit claims or other ones... then it's really, really difficult to go there as an older person and try to get the process moving so you actually know where to go"*. Despite these difficulties, CG1 had become a system veteran of local healthcare bureaucracy, developing sophisticated *"hacks"* to secure appointments for himself and his partner, P14. At his GP surgery, CG1 explained: *"The trick is, all the lines open at exactly 8 o'clock. What I did is I phoned before and timed the message to say exactly when it would switch over. If the message is one minute long and you phone at 7.59.20 seconds, you've already gone into the 8 o'clock [...] So I timed it... I dialed the number at 7.59.02, and I'm first or second in the queue"*. Without this timing trick, he would otherwise be *"fiftieth in the queue"*.

CG1 applied similar tactics elsewhere. Frustrated by long waits for NHS dentistry, he advised others to bypass the system by going to a local dental school: *"King's have a dental school here [...] if you go there 24 hours a day, just say, 'I'm visiting my friend who lives round the corner and I've got this terrible toothache, have a look at it.' And they'll see you!"*. For others, persistent struggle bred equal ingenuity, compelling them to devise workarounds the system never intended. Almost all PIP applications among our cohort ended in appeal, with tribunal waits stretching up to three years. P6 joked his appeal was *"coming up in two years' time"*. In contrast, P3 sidestepped London's backlog by using his sister's Welsh address: *"They say the panel is made up of someone from the medical profession, someone from the DWP, an independent arbiter. But if I'd stayed in London, my appeal would only be in London... My sister arranged it. She used her postal address"*. This ingenuity meant P3's case was heard and PIP awarded in four weeks. Alongside hacks, participants spoke of the significance of knowing to apply for key *"gateway benefits"*–for instance, Pension Credit, which subsequently unlocks access to: free prescriptions, TV licences and other entitlements. These accounts demonstrate how claimants are forced to develop repertoires of bureaucratic *"hacks"* and insider knowledge to access what should be basic entitlements. Far from empowerment, such expertise reflects survival within dysfunctional systems.

4.4 The Paradox of Accessibility and Systemic Design Flaws

Although presented as accessible, welfare processes–from paperwork to phone queues, appeals and outsourced platforms–often deepened barriers for applicants with communication impairments, trapping them in cycles of delay and exclusion.

4.4.1 Designed for Access, Trapped in Limbo.

Mandatory processes routinely entrapped participants in limbo cycles of paperwork, phone queues, appeals, reassessments and processing delays. Forms demand linguistically complex responses, while lengthy delays and repeated assessments leave applicants unable to plan their lives. Our welfare journey maps revealed that beginning a PIP welfare claim requires persistence: applicants must search for the correct DWP phone number, wait in a queue to request and then complete a thick booklet mailed to them[5]. For people with aphasia, this process was immediately overwhelming. P3 explained that *"a PIP just says a thousand words"* while P9 bluntly concluded *"it's not aphasia friendly"*. Those that engaged with forms described them as deliberately deceptive. P3 warned, *"they're very fond of slightly changing the form to try and trick you into being not eligible"*, while P4 described the *"whole application [as] misleading, because it wants you to put down how you are on your worst day, but it doesn't tell you to do that"*.

Many became trapped in cycles of filling in documents, appealing rejections and then starting again from scratch. SLT1 explained, *"you repeat this whole thing for three months... you have to revise it to make it worthy of more points"*. P4 recalled, *"It took me about 8 or 9 years! [...] then they say appeal it!"*. SLT1 aptly summarised, *"problematic from beginning to end, and round again"*. For P12, even three strokes and repeated applications brought no success: *"after the third stroke, we started the application at the beginning again"*. Even successful PIP applicants faced reassessment, restarting the process at any time. Most welfare phone lines compounded these barriers. P5 lamented that her *"days are ruined on hold"* while P25 admitted that he was *"at least number 30 in the queue"* when phoning his GP. These chokepoints had cascading effects. As P5 explained, *"if you don't have a high PIP you are not eligible to get better council housing"*. One benefit rejection could ripple across council tax, housing and transport entitlements, amplifying disadvantage for unsuccessful applicants. Rather than ensuring fair access, current systems trap applicants in cycles of waiting, reapplying and appealing that drain time and energy.

4.4.2 Outsourcing and Fragmentation. The outsourcing of welfare and NHS healthcare services to private contractors has introduced inconsistency and fragmented responsibility. While some cases are resolved quickly, others face repeated denials, lengthy delays and inaccessible digital interfaces. Depicted in Figure 8, participants frequently encountered outsourced platforms and applications when attempting to access NHS services, with mixed or limited success. P1 described her local GP's reliance on the Patchs app: *"You have to be there at 8 o'clock when it opens up. I've had the same experience of going there at five to 8 or so... 4, 3, 2, 1... 8 – I'm sorry, it's completely full!"*. After hours spent refreshing the app she concluded, *"that's the day gone"*.

When unsuccessful, she is diverted to an extensive Patchs questionnaire[6] designed to determine priority GP access, which asks absurdly *"It says things like–are you breathing or whatever? Are you dying? If that's the case, phone 999 or 111"*. When she finally attempted to walk in, the receptionist was inevitably *"a real jobsworth who said the computer says no!"*. Other participants noted similar digital gatekeeping. Some criticized apps instructing them to photograph and upload intimate health images as a prerequisite for remote care, which they described as *"uncomfortable"* or even *"insane"*. SLT7 contrasted profit-hungry private providers with NHS staff, noting that the latter *"have more people who are there because they want to help"*. Overall, outsourcing has produced digital systems that have fragmented responsibility, shifted burdens onto applicants and exacerbated exclusion for people with aphasia.

4.5 Hostile Design: Denial and Deterrence as a Systemic Objective

Applicants consistently perceived welfare systems as designed to cut costs rather than provide care. Assessments and procedures were not neutral checks but hostile encounters that dehumanised and embedded deterrence into everyday access.

4.5.1 Dehumanising Assessments. Welfare assessments were not neutral evaluations but described as humiliating and adversarial. The lack of assessor expertise and empathy compounded feelings of vulnerability, leaving applicants not just disbelieved but diminished. P3 recommended to *"always go for an in-person assessment or appeal"* and P6 warned, *"Take someone with you"*–reflecting how applicants prepared for assessments defensively. Yet even with such precautions, many felt fundamentally disbelieved. P7, blind in one eye post-stroke, recalled his assessor's report contained *"complete lies"*–including claims that he was driving despite being medically prohibited. P3 described his own encounter as *"terrible... [It was like we were at] two different bloody meetings. Everything we raised–they didn't note it"*. Applicants suspected surveillance was built into the process designed to *"catch them out"*. SLT1 recounted accounts of hidden cameras, while P3 joked bitterly: *"They film you in the waiting room... you can maybe limp into the assessment but if you do somersaults in the waiting room!"*.

CG1 and P14 left their Blue Badge assessment feeling *"tricked"*, as the assessor deliberately withheld the meeting room number, which compelled them to walk the length of the clinic–in what was a deceptive attempt to *test* P14s mobility–a decision eventually overturned on appeal. Such experiences undermined trust in assessors' expertise and motives. SLT1 concluded, *"They are not doctors. They are not speech therapists... They are basic office clerks who've been briefed by the government that we have to cut back on benefits"*. P4 agreed: *"The assessor is looking to deny you... the DWP don't attend the hearing!"* by contrast, he only felt validated when seen by a judge and doctor who *"see what you have to go through!"*. As SLT7 distilled, *"That's the sad truth... if you get a good person that cares, it's fine. The next time... you're completely dismissed"*. These encounters left applicants diminished and suspicious, reducing them to objects of disbelief and surveillance.

4.5.2 Obfuscation by Design. Participants repeatedly described welfare systems as deliberately confusing, with rules and processes engineered to deter and frustrate. Basic eligibility criteria felt arbitrary–such as PIP being age-limited to working age applicants yet notionally lifelong. Even those who had secured PIP but were migrating to Universal Credit described the process as harmful and exclusionary, with some believing it was designed to block disabled people from successfully transferring. Other benefits imposed contradictory demands: Employment Support Allowance required *"serious contributions to National Insurance"*, Access to Work locked applicants into a six-month commitment and Council Tax exemptions were widely described as convoluted. Means-testing criteria also imposed punitive burdens. CG1 explained: *"You're automatically*

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[5] Most participants could not read or write easily, yet were expected to produce extensive PIP documentation that impacted their future livelihoods.

[6] For people with aphasia, such questionnaires were often inaccessible and as P1 argued, more about easing reception workloads than triaging patients.

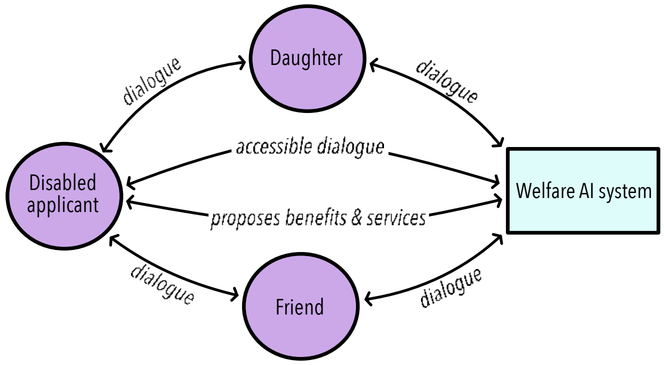

Figure 9: Visual summary of co-designers' vision of interdependent, aphasia-accessible AI dialogues that proactively propose welfare benefits and services.

cut out of a lot of things–you can spend all your life saving for this and working hard and when the time comes... they're not available".

Routine entitlements have become fraught: the Blue Badge scheme shifted from five-year automatic renewal to annual re-application, forcing repeated paperwork and medical evidence; P3 was struck off his GP list for not attending; CG1 found his repeat prescriptions quietly canceled after three months. Applicants also encountered mistrust and friction in the very mechanics of claiming. P3 and P5 both reported PIP forms being *"lost"* by the DWP, leading them to send applications tracked and keep their own copies. As P5 put it: *"They have a habit of losing forms!"*. Overall, these accounts depict systems built not for accessibility but deterrence, embedding friction, opacity and exclusion so that only the most persistent and resourced endure.

4.6 Envisioning Automated Service Futures

Across the workshops, co-designers acknowledged the inevitability of AI's integration into welfare services. As P2 noted, *"the government is very keen to adopt AI... it's coming, whether we like it or not"*. Broadly, co-designers acknowledged the rise of automation in the context of aging populations and expanding digital infrastructures–such as cashless payments, GP apps and supermarket self-checkouts–that have reshaped their everyday routines. They voiced particular frustration at the rapid disappearance of non-digital alternatives. SLT2 observed, *"suddenly you realize... you book your GP appointment through an app and you can't get them on the phone anymore"*.

While aware of their limited influence, co-designers were keen to advocate for improvements. As P2 put it, *"it's up to us individuals to try and make it better. But we don't have the [government] power"*. They also rejected the notion of AI as a flawless solution. SLT10 reminded the group, *"just like we have problems today with our phones... it shows that it's not a miracle cure"*. Co-designers anticipated significant accessibility risks, yet expressed cautious hope that AI could make welfare systems more inclusive, empathetic and democratically accountable. The following sub-themes explore these imagined futures.

4.6.1 Imagining Aphasia-Accessible AI Dialogues.

Co-designers reflected on widespread frustrations with existing AI voice recognition, recalling how automated systems consistently failed to understand their speech. P7 and P27 described struggling to enunciate his words over the phone during robocalls with his local council, while P4 was more blunt: *"Voice recognition doesn't work with people with aphasia!"*. SLT8 even questioned whether AI could ever adapt to the highly variable presentations of aphasia and dysarthria. Beyond recognition, participants also highlighted the cognitive difficulty of producing long, precise instructions for AI, P7: *"how's P4 going to come out with a complete, long, long sentence to tell his [AI] machine to go off to do something"*. Many instead envisioned AI that slowed down and gave them time to speak. P7 insisted that *"the time thing should be longer"*, and P10 imagined an AI that could wait a full minute or more for a reply. P2 explained that when rushed she quickly became flustered, which only worsened her aphasia and speech–patience was fundamental for accessibility.

Proposed in Figure 9, participants welcomed the idea of AI supporting existing interdependencies [14] by involving trusted intermediaries within dialogues. AI bots that could contact relatives on a user's behalf were described as *"very helpful"* by P2 and endorsed current practices where spouses, children or friends mediated bureaucratic tasks. Equally important was the prospect of multi-modality. P8 and SLT2 suggested adding text or visuals alongside audio so communication did not rely solely on speech. Others valued flexible input options, such as being able to type instead of speaking. Conversational design also mattered: closed or structured questions were seen as easier for those with word-finding difficulties, compared to open prompts. Finally, participants stressed that many people with aphasia may not know what adaptations or services are available to them. Just as occupational therapists (OT) suggest home modifications, they imagined AI systems that could proactively suggest options, provide information and scaffold key decision-making, SLT2: *"An OT comes to your house and sees what your needs are, and then they're able to think about what might be needed, and maybe that would be missed?"*. In sum, co-designers envisioned aphasia-accessible AI dialogues that are **patient, multimodal, interdependent** and **supportive**–moving beyond current

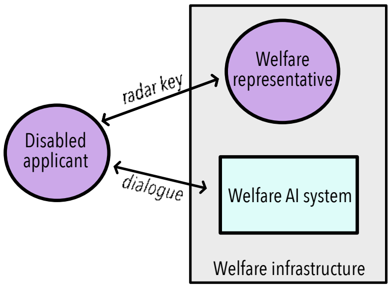

Figure 10: Depicts co-designers envisioned radar key mechanism with a human-in-the-loop to support claim processing.

failures of voice recognition to foster genuinely inclusive conversations.

4.6.2 Empathetic AI in Welfare. Co-designers repeatedly stressed that future AI welfare systems would need to be genuinely empathetic to disability and difference. Many worried that the progressive over-use of technologies within welfare was already leaving older adult people behind. As P22 noted, *"some people are okay and prone to working with technology. Some people are not"*, while SLT2 added concern for those who get *"left behind when all the systems change"*. Others emphasised that being *"tech-savvy"* was meaningless if impairments made interaction fundamentally impossible, CG3: *"it doesn't help you being tech-savvy if you can't use your hands anymore, or if you can't see the screen"*. Concerns were raised that AI would be too blunt, demanding or ungrounded in real life. Participants criticized AI dialogues that demanded photographs of illness, delivered rapid-fire questions without explanation, rigidly followed prescriptive procedures and overlooked applicants practical barriers such as unreliable local WiFi. P2 explained, *"the robot just asks you questions... it's asking impossible questions!"*. While P28 and P29 agreed that envisaged AI dialogues were simply *"too difficult"* for them to manage independently–they noted that repeated unsympathetic AI requests added stress and worsened their communication with aphasia. CG3 added that disabilities can be hidden and fluctuate: *"you will have good days, bad days"*, a nuance AI may fail to appreciate.

Depicted in Figure 10, a consistent theme was the need to keep a human-in-the-loop. Speaking to a named, accountable welfare representative was seen as a safeguard against both AI-error and indifference, P4: *"you're speaking to a real person. Not a robot that doesn't care"*. Several proposed a *"radar key"*[7] mechanism that would allow disabled applicants to request human support during AI dialogues, while recognising that safeguards would be needed to prevent misuse. At the same time, participants hoped AI could reduce their current workloads rather than add to them, proactively surfacing welfare information and entitlements that are currently hidden. As P4 observed with benefits, *"if somebody doesn't tell you about it, you won't know about it"*. They also valued the prospect of empowerment through transparency and control–for instance, being able to undo their input mistakes, track waiting times for welfare services or understand how decisions were made via summaries.

In sum, co-designers envisioned empathetic AI systems as **compassionate**–anchored in lived realities and attentive to fluctuating capacities, designed to ease their **workloads**, ensure **transparency** and **accountability** by clarifying and owning welfare decisions and crucially, **retain human recourse** whenever automation falls short.

4.6.3 Open, Democratic and Truthful AI. Shown in Figure 11, co-designers strongly articulated that any welfare AI must be democratic, transparent and accountable rather than proprietary or opaque. They emphasized that the underlying motivations, intentions and goals of welfare AI systems should be publicly visible to disabled applicants. In technical terms, participants advocated for open-source AI models running on public servers, free from bias or coercive governmental manipulation. As P3 explained, *"the AI system should not be in the hands of the government in the sense that for the system to work, it has to be separate so that it's something that's publicly agreed upon by the citizens!"*. Broadly, co-designers frowned upon outsourcing welfare AI to external companies, as SLT10 explained: *"Completely outsourcing the responsibility [...] the [external] company is just there to make profit and to deny service to disabled applicants"*–plus reducing government accountability. Others warned that without openness, welfare AI risked becoming a black box used to manipulate or harm applicants, echoing adversarial practices already present in welfare systems. For example, many feared AI in welfare services would act as another mechanism of austerity, P6: *"The reason why they are now introducing AI into public services is simply to cut costs. Less people, less people needed to pay"*. Such perspectives fueled concerns that AI would primarily reduce staffing costs and increase welfare denials–serving as yet another deterrent for disabled applicants.

In contrast, co-designers envisioned more hopeful roles for AI: systems that provide truthful, comprehensive information about welfare entitlements, timelines and possibilities–demystifying what now feels like a secretive, luck-based process. As SLT2 explained, *"It's terrible, all these [welfare benefits] things... they shouldn't be a secret, or something you almost find out by luck! Someone should tell you what you're entitled to!"*. Similarly, SLT10 remarked *"you would know what might be possible–and what the council might say yes to!"*. Co-designers felt that truthful, transparent welfare AI systems could help prevent the endless re-applications and bureaucratic loops they had often endured. As CG3 observed, *"something like two-thirds of rejections of PIP are overturned at appeal"*, a figure that highlights

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[7] Used to access disabled toilets in the UK.

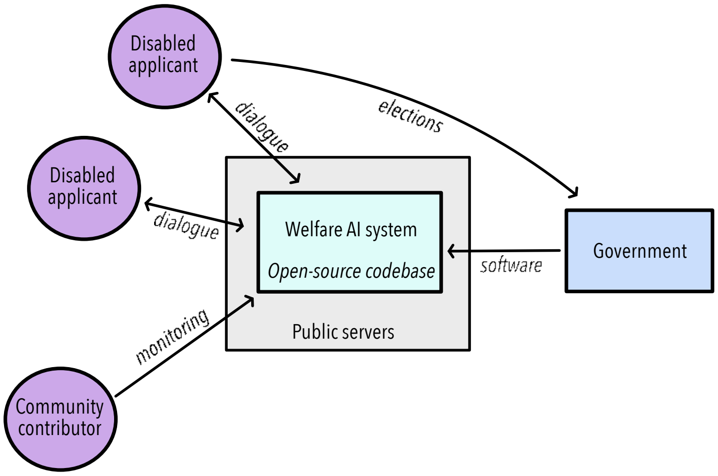

Figure 11: An aggregated illustrative view of co-designers perspectives concerning envisaged open-source welfare AI.

how illegitimate denials currently force applicants into needless struggle. Co-designers insights, reflect a demand for welfare AI systems that are **open**, **publicly governed** and **truthful**–resisting proprietary black-box deployments and ensuring that automation enhances rather than obstructs access to welfare support.

5 Discussion

Our findings highlight the value of engaging disabled and impacted communities in participatory design. Such approaches can foster fairer and equitable AI systems that shape welfare services while reducing digital exclusion and ableist harms. We now discuss how welfare systems can: (1) reorient towards accessible digital governance from the bottom up, (2) work towards compassionate AI governance and (3) finally emphasize the importance of explicit system motivations, accountability and the use of welfare AI-infrastructure as a scapegoat.

5.1 Accessible Digital Governance from the Bottom Up

This study found that the rapid digitisation of welfare services and governance infrastructures has been profoundly disruptive for disabled people and their communities. Alfrink et al. [5] define contestable AI systems as those *"open and responsive to human intervention"*. In stark contrast, the UK government's *Digital by Default* strategy has left disabled citizens with little agency to respond and contest the top-down digitisation of public service infrastructures, which has reshaped their access to essential welfare benefits. This stands in complete opposition to the democratic *Digital Civic* ethos of citizen empowerment through technology [121]. As a result, people with aphasia and other disabilities–already among the most digitally excluded in the UK–remain systematically marginalised and disempowered [43]. Therefore, prior research has argued that government-mandated digitisation of welfare infrastructures is fundamentally hostile and adversarial [17, 123, 124].

Many in our study were severely under-resourced and all were unable to work due to disability. Yet Gov.uk and DWP webpages were poorly designed for smartphone use, even though most co-designers lacked reliable WiFi, laptops, tablets or printers. Prior work highlights the centrality of smartphones for disabled communities [59, 130], underscoring the need to design e-government web platforms for smartphone-only access. As Figure 7 shows, most applicants with aphasia instead resort to calling government helplines–an experience marked by automated queues and heavy burden. These services could be improved through priority lines for disabled callers [48], ML-based voice recognition for aphasic speech [63], and accessible video-conferencing that supports non-verbal communication [84]. In this way, technology could empower people with aphasia's preferred modes of access.

Narrowing the digital divide through improved digital and technological literacy is fundamental for supporting disabled applicants as welfare becomes increasingly digitised. Sin et al. [108] rightly warned that digital division exacerbates social marginalisation. Ongoing HCI research must continue to ensure basic computer services are accessible for communities with aphasia, including: email [4], authentication and password management [95], search engines [62], smartphone use [18], online banking [23], and assistive tools for reading and writing [80]–these all now serve as critical technological gateways to welfare services. Government and AI-developers must not assume disabled applicants have seamless access to computers, WiFi or community support. Nor should welfare infrastructures presume independent digital interaction, since post-stroke aphasia can impair literacy and make computers and smartphones permanently difficult to use [62]. As Figure 6 shows, applicants with aphasia often rely on interdependent networks of family, friends and community resources to begin, maintain and contest welfare claims. This collective process typically involves multiple actors helping with forms, assessments and phone calls.

Current interdependencies are stratified by class, leaving applicants with fewer resources disproportionately marginalised. In wealthier boroughs, local intermediaries (e.g., Council social prescribers) offered crucial support by assisting with digital forms, appeals and applications. Similarly, in India, Karusala et al. [60]

document the collective action involved in contesting AI-driven housing decisions. To strengthen such interdependencies, multi-party LLM chatbots could engage applicants and their trusted intermediaries simultaneously, facilitating more collective and efficient welfare applications [2]. While prior work has explored accessible social media for people with aphasia [76], future technologies could instead help disconnected welfare applicants connect, organise and mobilise–similar to peer support in Reddit forums like r/BenefitsAdviceUK and r/Stroke. In our participatory research, we observed promising peer engagement among co-designers with aphasia, SLTs and caregivers around shared struggles with welfare. Co-designers often exchanged *hacks* and *strategies* for navigating hostile infrastructures, underscoring how digitised welfare systems neither inspire trust nor serve vulnerabilized citizens.

While our study is situated in the UK's welfare infrastructure, the implications resonate internationally. Expanding welfare digitisation and automation have globally amplified access frictions for communities already facing barriers and digital exclusion. Recent cases illustrate the risks: Australia's Robodebt scandal unlawfully raised hundreds of thousands of debt notices against citizens claiming welfare [111]; research from Denmark shows that mandatory welfare digitisation sustains existing stratifications and causes new harms [28, 104]; in the United States, automation in Medicaid administration has wrongly terminated children's coverage [68] and Michigan's Integrated Data Automated System (MiDAS) falsely flagged thousands for unemployment insurance fraud [47]. Together, these cases underscore the need for accessible, bottom-up and contestable digital governance through which claimants, advocates and disabled communities can democratically shape and contest welfare automation.

As automation expands–through chatbots, LLMs and algorithmic decision-making–we anticipate more adversarial prompting [64] and jailbreaking [126] as disabled applicants seek fairer welfare outcomes. From an AI development perspective, red-teaming [42] will become increasingly important. Yet fairness requires more than technical safeguards: robust complaint escalation [60] and human-in-the-loop interventions [5] are vital to counter the fallibility of automated systems. Resisting techno-utopian [105] and techno-ableist [107] assumptions is equally critical, as top-down technological deployments rarely ensure better outcomes. Welfare systems should empower, not constrain, disabled citizens. For people with aphasia, communication challenges raise doubts about whether conversational chatbots and LLMs [1, 38, 89] are suitable for welfare access. Familiar graphical user interfaces (GUIs) may be more accessible. The recent development of an aphasia-accessible GPT [11] underscores the urgency of addressing AI-accessibility to avoid deepening digital inequality.

5.2 Towards Compassionate AI Systems

Digitised welfare services and government automation should aspire to be more compassionate. Currently, participants encounter multiple harms: exclusion, denial of support, dehumanising assessments and prolonged bureaucratic limbo. The welfare system completely neglects the user experience (UX) of disabled applicants with aphasia. Although governments often claim that AI will make welfare systems more responsive and humane–the evidence presently suggests otherwise. For example, Zhou et al. [133] found a public service chatbot unsympathetic and contextually unaware. More broadly, AI cannot replace genuine care with artificial empathy [101]. LLMs such as ChatGPT have been criticised for *"glazing"*–appearing overly friendly and insincerely supportive [39] and for fabricating essential information through hallucinations [132]. Such shortcomings place older adult and vulnerabilized disabled applicants with aphasia at particular risk, where harmful interactions could escalate into emotional manipulation or even legal disputes within critical welfare contexts.

Instead, compassionate AI in welfare services could draw on the Nielsen [91, 92] usability heuristics. Yet many of these heuristics are difficult to benchmark [27] and require ongoing UX research to evaluate their responsible implementation in real systems [122]. A starting point should be transparency: clear communication of wait times and, rather than boilerplate, plain-language explanations for decisions that specify the reasons and evidence considered. GDPR data protection frameworks already mandate *"meaningful information"* about the logic of automated decisions [51]. Disability claimants should therefore be treated as partners with a right to know how their data is used and why claims are approved, denied or flagged. Maintaining auditable records of each algorithmic decision would also allow government officials to explain outcomes. Equally important is safeguarding sensitive data from disabled applicants [131]. Concerningly, AI systems and chatbots have already been implicated in several high-profile data leaks [50, 99, 113, 129]. Prompt injection attacks [129] show how malicious inputs can trick chatbots into exposing personal data, raising acute risks in welfare contexts where confidentiality is critical.

While our findings are grounded in UK welfare, HCI must continue to examine how government systems shape people's experiences across diverse global contexts. In India, Mudliar [81, 82] report that, rather than offering a compassionate service, biometric authentication at point-of-sale devices for state food entitlements often imposes delays, undermines dignity and compromises claimants' privacy. As in our study, claimants in rural India also contend with unreliable internet connectivity and device failures, drawing on interdependent family support (even children) to navigate stressful biometric checks [81, 82]. Instead, technology and AI in welfare services should lighten the workload placed on applicants, both disabled and non-disabled. Systems can responsibly advise claimants about additional benefits for which they are realistically eligible. Where government already holds evidence (e.g., earnings, address history, prior awards), AI can pre-populate forms so applicants confirm rather than repeatedly reproduce paperwork [32]. When new records are required, agencies should obtain them with consent before placing demands on claimants. For fluctuating health conditions, reasonable self-attestation should be accepted unless contradicted by existing records. The promise of automation should be a welfare system that supports rather than burdens disabled claimants [32].

5.3 Explicit Motivations, Accountability and AI as a Scapegoat

The explicit motivation of any system is critical. Co-designers stressed that government intentions must be transparent, since citizens directly experience these motivations through digitised and increasingly automated welfare infrastructures. In AI research, model cards [78] have been proposed as a way to democratise AI by reporting intended applications and expected performance for expert and non-expert audiences, including disabled people. Similarly, Leeds City Council in the UK has documented the design of its Money Information Centre Chatbot, which helps citizens access services related to money, debt, benefits, housing, energy, food and employment [33]. Ultimately, the motivations of automated welfare systems *must* be made explicit.

In principle, AI and automation could improve welfare services for disabled applicants by reducing administrative burdens and creating more supportive infrastructures. For example, AI might automate laborious tasks and simplify applications [32]. However, as noted in Section 3.1, if the primary government motivation is to cut benefits, outsource services or reduce successful claims–digitisation and automation will serve as deterrence. As Watson et al. [123] argues, HCI research must interrogate the entire welfare life cycle–before, during, and after access–since support can be withdrawn at any stage. Several co-designers described being forced to reapply for PIP and other benefits after government algorithms erroneously declared their disability had improved. Internationally, cases like the Netherlands SyRI ruling, which blocked a welfare-fraud detection system that targeted poorer neighborhoods for violating human rights–underscore that transparency about motivations and routes to accountability is essential to avert algorithmic harms and scapegoating [93].

If the underlying government motivation is restriction, welfare service technologies–including AI–may be positioned as a *scapegoat.* Governments could nefariously attribute reduced welfare provision and disabled applicants harms to technological infrastructures rather than accept accountability. This dynamic is exacerbated when services are outsourced to third-party providers, further shifting responsibility onto external contractors and technological infrastructures[8]. Prior research in human–robot interaction (HRI) shows that people judge machines more harshly than humans for equivalent actions [16], particularly when vulnerabilized groups are affected [56, 71]. Welfare applicants will therefore demand higher standards of performance and transparency from machine decision-makers than from human officials [24, 56]. Admittedly, scapegoating can also invert: disabled claimants may strategically locate fault in the system thereby leveraging the presence of automation to contest undesirable outcomes and press for human accountability. Fundamentally, these dynamics expose a major accountability risk: outsourcing, digitisation and AI-automation could allow governments to avoid responsibility for applicants negative welfare outcomes [41, 100, 123].

6 Limitations

This research has several limitations. Initially, it reflects a specific context: our co-designers were based in the Global North and, in most cases, were comfortable using smartphones. While multicultural in background, people with disabilities are highly diverse, and not all individuals with aphasia would demonstrate the same technology literacy or yield comparable results [96]. Indeed, as all co-designers were recruited through an aphasia charity their perspectives may have been shaped by that affiliation – for instance, they may have been more accustomed to support, mutual aid and advocacy than those outside such networks. At the same time, this context provided essential infrastructure that made participation accessible, fostering a supportive environment in which many co-designers could meaningfully engage. Consequently, our findings should be interpreted with caution and may not generalise to broader populations.

Given the scope of this research, the themes and challenges identified are likely more applicable to AI-automated welfare services for disabled populations than to other domains of public service automation (e.g., legal services). Our design-fiction video prompts were crafted to elicit both interactional and decision-making AI, yet the actual form of AI governance is not fixed in current welfare delivery. Consequently, our prompts were speculative rather than an evaluation of deployed systems. To minimise researcher bias, we used non-directive prompts and did not prime co-designers towards a single version of AI. This choice encouraged divergent ideas about the impacts of AI on welfare access, but limits the specificity of our findings and the precision of our implications. Finally, the technical aspects of our proposed changes to public service AI systems remain untested in real-world deployments. Future work should iteratively develop and evaluate such systems to ensure inclusive automation in practice. Despite these limitations, this study provides meaningful community input into envisioning more inclusive AI-automated welfare futures.

7 Conclusion

Our work foregrounds the lived experiences of people with the communication disability aphasia in navigating digitised welfare systems and articulating their perspectives on AI-automated futures. We report findings from a four-stage participatory design study comprising eight workshops with more than 40 co-designers. Reflexive thematic analysis identified five core challenges: the cost of performing disability, geographies of inequity, navigating digital bureaucracy, the accessibility paradox and hostile design. Co-designers voiced concerns about welfare AI-automation, yet also envisioned inclusive alternatives: patient, multimodal and supportive dialogues; welfare systems that are empathetic, transparent and provide human recourse; and infrastructures that are open, publicly governed and truthful.

Future research should employ participatory methods to continually engage disabled and impacted communities in shaping civic technologies and their progressive automation. Our findings highlight key implications for HCI: the need to reorient welfare towards accessible, bottom-up digital governance; the importance of designing compassionate AI systems; and the necessity of making motivations and accountability explicit, while resisting governmental exploitation of outsourcing, digitisation and AI-automation as scapegoats.

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[8] The UK Post Office Horizon scandal shows how the British government can scapegoat technology: faults in the outsourced Fujitsu system were blamed for accounting discrepancies, contributing to the wrongful prosecution of sub-postmasters [31, 87].

A Appendix

A.1 Key UK Disability-related Welfare Benefits and Services for Applicants with Aphasia

Table 2: Key UK disability-related welfare benefits and services.

Category	Name	Description
Extra-costs benefits	Personal Independence Payment (PIP)	For working-age adults to help with the extra costs of disability.
	Disability Living Allowance (DLA)	For children under 16 with care and/or mobility needs.
	Attendance Allowance	For people over State Pension age needing help with personal care.
Income replacement	Employment Support Allowance (ESA)	For people unable to work due to disability or illness.
	Universal Credit (UC)	Includes a *"Limited Capability for Work"* element for disabled claimants.
	Statutory Sick Pay (SSP)	Short-term payment from employers for those temporarily unable to work.
Carer and support	Carer's Allowance	For people providing regular unpaid care for a disabled person.
	Carer's Element of UC	Additional payment within Universal Credit for carers.
Housing and mobility	Disabled Facilities Grant	Local authority funding for home adaptations.
	Motability Scheme	Allows mobility benefit to be exchanged for a leased vehicle, scooter, or wheelchair.
	Housing Benefit	Help with rent, with additional disability-related premiums (phasing out under UC).
Other entitlements	Blue Badge Scheme	Parking concessions for disabled drivers and passengers.
	Council Tax Exemptions	Discounts or financial support with local taxation.
	Access to Work	Grants for workplace adjustments, equipment, or support workers.

A.2 Co-design Workshop SLT and Caregiver Participants

Table 3: Demographic overview of the 13 SLT and caregiver co-designers. The table details each co-designer’s role, professional experience with people with aphasia, and attendance at co-design workshops. Participation codes are: ABM = Associate Board Member, UI = Unstructured Interview, and CW = Co-design Workshop.

Name	Gender	Role	Experience	Participation
SLT1	Female	SLT	40+ years	ABM, UI, CW1, CW3, CW4
SLT2	Female	SLT	10 years	ABM, UI, CW2, CW3, CW7, CW8
SLT3	Female	SLT	1 year	CW1, CW4
SLT4	Female	SLT	1 year	CW1, CW4
SLT5	Female	SLT	1 year	CW1, CW4
SLT6	Female	SLT	1 year	CW1, CW4
SLT7	Female	SLT	8 years	CW5
SLT8	Female	SLT	3 years	CW6
SLT9	Male	SLT	3 years	CW6
SLT10	Female	SLT	3 years	CW7
CG1	Male	Caregiver	20 years	CW2
CG2	Female	Caregiver	20 years	CW3
CG3	Male	Caregiver	2 years	CW8

A.3 Co-design Workshop Participants with Aphasia

Table 4: Demographic data, communication challenges, and co-design workshop attendance for the 29 co-designers living with aphasia. Aphasia Severity Rating (ASR) ranges from 0 (non-functional speech, writing, or auditory comprehension) to 4 (language difficulties barely apparent), as assessed by an SLT. Hemiplegia status is reported. Participation codes are: ABM = Associate Board Member, UI = Unstructured Interview, CW = Co-design Workshop, and UCM = Universal Credit Migration Call.

Name	Gender	Age	ASR	Hemiplegia	Participation
P1	Female	70s	4	No	ABM, UI, CW1, CW4
P2	Female	80s	3	Yes	ABM, UI, CW3, CW6, CW8
P3	Male	60s	4	Yes	ABM, UI, CW1, CW3, CW4, CW6
P4	Male	50s	2	Yes	ABM, UI, UCM, CW1, CW4, CW6
P5	Female	40s	2	Yes	ABM, UI, CW4
P6	Male	60s	2	No	CW1, CW4, CW6
P7	Male	70s	3	Yes	CW1, CW6
P8	Female	60s	1	No	CW1, CW4, CW6
P9	Male	50s	2	Yes	CW1, CW4, CW6
P10	Male	60s	1	Yes	CW1, CW4, CW6
P11	Male	70s	2	No	CW1, CW6
P12	Female	60s	1	Yes	CW2, CW4, CW5, CW6
P13	Male	30s	2	No	CW2, CW7
P14	Female	70s	1	Yes	CW2
P15	Male	50s	3	Yes	CW2
P16	Male	50s	2	No	CW2
P17	Male	90s	2	No	CW3
P18	Male	80s	3	Yes	CW3
P19	Female	50s	2	Yes	CW2, CW7
P20	Male	50s	1	Yes	CW3
P21	Female	60s	2	No	CW3
P22	Male	60s	4	No	CW4, CW6
P23	Female	40s	2	Yes	CW4, CW6
P24	Male	70s	2	No	CW5
P25	Male	40s	2	Yes	CW5
P26	Male	60s	3	No	CW5, CW7
P27	Male	40s	2	Yes	CW5, CW7
P28	Male	70s	1	Yes	CW8
P29	Male	70s	2	No	CW8

Acknowledgments

This research addresses a profoundly difficult and sensitive area. We wish to forewarn researchers who choose to pursue this topic that many disabled applicants shared harrowing stories of the tremendous pain they have endured at the hands of the very welfare systems and government officials meant to represent and support them. We are deeply grateful to our co-designers for their bravery in sharing their lived experiences and insights. At the same time, we recognise the structural harms produced by ongoing austerity measures and cuts to welfare services in the UK, which have had irreversible consequences for disabled communities nationwide. We hope for a future where technology serves to empower disabled communities. We would also like to thank the Include Digital Economy Network (INCLUDE+) for funding this project and providing support throughout every stage of the process.

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